CLAIMS:

1. A method of traffic management in an optical network, based on measuring chirp of optical signals transmitted along an optical path extending in said network.

2. The method of traffic management in the optical network according to Claim 1, wherein the optical path extends between a first location and a second location being a monitoring point and comprises one ore more optical channels carrying the optical signals, the method comprising:

- measuring chirp at least at one optical channel at the monitoring point;
- in response to the measured chirp, judging about a level of non-linearity in said at least one optical channel of the optical path up to the monitoring point,
- in case the non-linearity level is considered higher than a selected acceptable level, performing one or more traffic management operations to reduce said non-linearity level.

3. The method according to claim 1, wherein the step of measuring chirp comprises measuring a second derivative of phase of an optical signal in said at least one optical channel with respect to time.

4. The method according to claim 2, further comprising a step of repeating the method from the step of measuring the chirp, up to a moment when the non-linearity level is considered to be not higher than the selected acceptable level.

5. The method according to claim 2, wherein the traffic management operations include one or more operations selected from the following non-exhaustive list:

- reducing bit rate of at least one of said optical channels;
- rerouting at least one of said optical channels;

- reducing a number of optical channels in the trail;
- transmitting information, previously carried at a specific wavelength, via a vacant optical channel of the same optical path at a different wavelength.

6. The method according to Claim 5, wherein said operation of rerouting of said at least one optical channel is performed by routing the optical signals of one or more of the optical channels for regeneration, and returning said signals back to said optical path.

7. The method according to Claim 5, wherein said operation of rerouting of said at least one optical channel is performed by routing one or more of the optical channels via a different optical path and returning thereof to the monitoring point via said different optical path.

8. The method according to Claim 5, wherein the operation of reducing the number of optical channels is performed by temporarily ceasing transmission of one or more of the optical channels via the optical path.

9. The method according to Claim 2, wherein said acceptable level of non-linearity is defined by selecting at least one threshold chirp value.

10. The method according to Claim 2 wherein said acceptable level of non-linearity is defined by selecting a threshold BER (bit error rate) value.

11. The method according to Claim 2, wherein said acceptable level of non-linearity is defined by selecting a range between a lower bound and an upper bound, where the lower bound is presented by an absolute chirp value calculated for the optical path in its linear condition, and the upper bound is presented by a maximally acceptable value of BER (bit error rate).

12. The method according to Claim 11, wherein the traffic management operations are performed gradually, some of them upon exceeding the lower bound and some of them upon exceeding the upper bound of said range.

13. The method according to Claim 2, further comprising performing at least one preliminary operation selected from the following non-exhaustive list:

- calculating chirp for a linear condition of said optical path for at least one of said optical channels, and obtaining at least one absolute chirp value based on said calculations;
- building a number of curves for at least one of said optical channels, wherein each curve reflects dependence between a real chirp and BER at a particular bit rate of optical transmission; and selecting at least one threshold BER value for the number of said bit rates;
- performing numerical calculations of a real chirp for at least one of said optical channels of the optical path being in a non-linear condition; and selecting at least one threshold chirp value based on said calculations.

14. The method according to Claim 1, being performed at two or more optical channels of the optical path.

15. The method according to Claim 1, comprising performing thereof at a plurality of monitoring points in the optical network, thereby ensuring monitoring of non-linearity effects at sections of the network formed between the monitoring points, and performing various traffic management operations for reducing the non-linearity effects at suitable sections of the network.

16. A system capable of performing the method for traffic management in an optical network according to the method of Claim 1.